

Consumer and Family Sciences



Department of Foods
and Nutrition

PURDUE
UNIVERSITY

Nutrition & Aging

In the United States today, about 13% of the population is over 65 years of age; by the year 2030, this number will increase to 20%. As the number of senior citizens grows, so does the interest in finding out more about the process of aging, and how aging affects nutritional needs.

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The aging body

Many changes take place as the body ages. These changes usually are a normal part of aging and not a sign of illness or disease.

Sensory changes

Sensory changes occurring in the mouth are common as people get older. A diminished sense of taste and smell may make food less appealing. Also, glands may produce less saliva, which can cause problems with chewing and swallowing. In addition, tooth loss or poorly fitted dentures can cause trouble with chewing. People who have difficulty chewing should first have a thorough dental checkup. Until dental problems are corrected, eating a wide variety of easy-to-chew foods will provide needed nutrients. Choose from the following:

1. **Meat and protein foods:** eggs, cottage cheese, cheese, ground meat, tuna, peanut butter
2. **Grain products:** bread, cooked cereal, muffins
3. **Milk products:** yogurt, milkshakes, milk, custard
4. **Fruits:** juices, bananas, canned fruit, chopped fruits
5. **Vegetables:** chopped raw or cooked vegetables

If dry mouth causes difficulty in swallowing, drinking liquid or eating, moist foods will help. Moisten foods by:

1. Using gravy, broth, sauces, or syrups.
2. Dunking foods in coffee, tea, milk, or other beverages.
3. Taking a swallow of beverage with each bite of food.

If food seems unappealing because of a decrease in the body's ability to taste or smell, the following ideas may help to perk up meals:

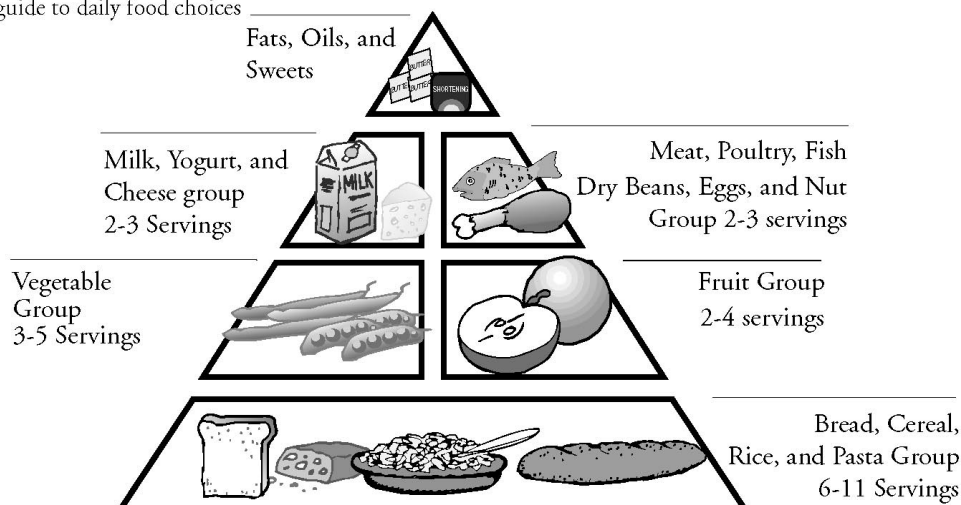
1. Flavor foods with strong seasonings such as onion, garlic, oregano, or mint.
2. Use tart flavors such as pickles, vinegar, and lemon juice to enhance taste.
3. Marinate meats in fruit juices, wines, Italian dressing, and sweet-and-sour sauce for extra zest.
4. Use colorful garnishes to make food more appetizing.

Changes in energy needs

As a person gets older, the body needs fewer calories (energy from food). There are two reasons for this. First, the basal metabolic rate (calories needed for involuntary work like breathing, heartbeat, and food digestion) decreases with age. Second, people tend to be

Food Guide Pyramid

A guide to daily food choices



The amount you eat may be more than one serving. For example, a dinner portion of spaghetti would count as two or three servings of pasta.

Is as one serving?

Breads, Cereals, Rice, and Pasta

- 1 slice of bread
- 1/2 cup of cooked rice or pasta
- 1/2 cup of cooked cereal
- 1 ounce of ready-to-eat cereal

Vegetables

- 1/2 cup of chopped raw or cooked vegetables
- 1 cup of raw leafy vegetables

Fruits

- 1 medium apple, banana, orange
- 3/4 cup of juice
- 1/2 cup of chopped, cooked, or canned fruit

Milk, Yogurt, and Chesse

- 1 cup of milk or yogurt
- 1-1/2 ounces of natural cheese, 2 ounces processed cheese

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts

- 2 to 3 ounces of cooked lean meat, poultry or fish. Count 1/2 cup of cooked beans, 1 egg, or 2 tablespoons of peanut butter as 1 ounce of lean meat.

Fats, Oils and Sweets

- Use sparingly (limit calories from these, especially if you need to lose weight.)

less active as they age. While the older body needs fewer calories from food, it still needs about the same amount of important nutrients (proteins, vitamins, and minerals) as the younger body. By making careful food choices, an older individual can get all the needed nutrients without extra calories and without nutrient supplements, but it does take planning.

The Food Guide Pyramid, shown above, simplifies planning. By design, foods containing similar nutrients are placed in the same category or food group. Foods that contain many calories and few nutrients (candy, soda pop, potato chips, etc.) are not included in the Food Guide Pyramid. Instead, they are represented as a category at the top of the pyramid called "fats, oils, and sweets." Eating the recommended number of servings from each of the food groups and choosing a variety of foods within a food group make up the backbone of a nutritious eating style. "Other" foods may be added in moderation if desired.

Many older people do not consume all of the fluids their bodies need.

Reduced thirst mechanism and bladder control

Many older people do not consume all of the fluids their bodies need. In younger adults, the brain keeps track of how much water is in the body and sends out a thirst signal to tell the body to drink. Because the thirst signal may become weaker with age, older people need to remind themselves to drink instead of waiting until they feel thirsty. A related problem is incontinence (involuntary release of urine from the bladder). In older individuals, a weakening of the bladder muscles often causes incontinence. Sometimes, people cut back on liquids in hopes of avoiding an embarrassing "accident."

Constipation

Drinking at least 6 to 8 cups of fluid each day is important in guarding against dehydration and constipation. With aging, the muscles that move food through the digestive tract become weaker; often this slows the passage of food through the intestines. Reduced muscle action and drinking too little fluid play a part in causing constipation. Choosing high-fiber foods (fruits, dried peas and

beans, vegetables, and whole grains) and drinking plenty of fluids usually prevent constipation. Laxatives should not be used to treat constipation unless recommended by a doctor.

Food and drug interactions

Food is essential for life; medications are important too. But when mixed together, foods and drugs may combine to keep important nutrients in foods from being used by the body or to make drugs less effective. Because older people frequently use both prescription and over-the-counter drugs, they should be aware that food and drug interactions have the potential to become a problem.

How do foods and drugs interact? Several ways are possible.

1. Some drugs interfere with the body's uptake of important nutrients. For example, antacids that contain magnesium and aluminum hydroxide may lower uptake of vitamin A in the body. Mineral oil, sometimes used as a laxative, prevents the body from absorbing the fat-soluble vitamins, A, D, E, and K. For this reason, mineral oil should not be used as a laxative.
2. Some foods may interfere with the body's uptake of medicine. For example, dairy products interfere with the absorption of tetracycline, an antibiotic.
3. Some foods may increase the body's uptake of medicine. Taking an iron supplement along with a food rich in vitamin C (such as orange juice) will help the body absorb more iron. This is one of the few good food-drug interactions.
4. Some drugs may decrease appetite. Chemotherapy, used to treat cancer, often causes nausea, vomiting, and changes in taste sensation.
5. Some drugs may increase appetite. Insulin, steroids, and certain antihistamines can cause a person to feel hungrier than normal.
6. Alcohol should be avoided when taking any type of prescription or over-the-counter medication. When mixed with antihistamines, sleeping pills, or tranquilizers, alcohol can cause loss of consciousness. When taken

with oral diabetes medicine and certain antibiotics, alcohol can cause flushing, headaches, nausea, vomiting, and chest pain. Alcohol may also dissolve the coating on time-release pills, resulting in a potentially toxic dosage.

To avoid food-drug interactions, take the following precautions:

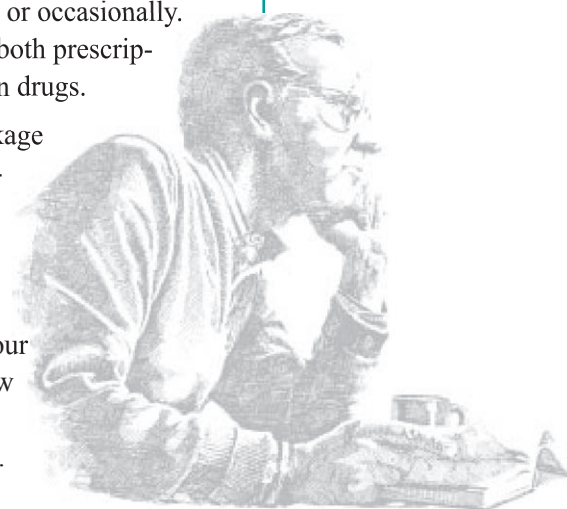
1. Make sure your doctor knows about the drugs you take regularly or occasionally. This list should include both prescription and non-prescription drugs.
2. Read the labels and package inserts of over-the-counter drugs.
3. Follow directions. Take drugs as prescribed.
4. Don't be afraid to ask your doctor or pharmacist how the drugs might interact with your favorite foods.
5. Be sure to tell your doctor of any unusual symptoms that you notice after eating a particular food.

The importance of food and drug interaction cannot be over-emphasized. Rely on your doctor and pharmacist, and label instructions, to get the full benefit from medicine while avoiding food and drug interactions.

Vitamins and minerals

Often, older people have problems getting the amounts of vitamins and minerals that they need for good health. Vitamins D and B-6, folic acid, and calcium are of special concern to older individuals.

Vitamin D is found in liver, fish, and dairy products. Also, the body can make vitamin D when the skin is exposed to sunlight. This nutrient is needed to keep bones healthy. When the body is low in vitamin D, osteomalacia, a disease that causes softening of the bones, may occur. Because some older people don't go outside much, or only go outdoors with most of their skin covered, their bodies do not make



Don't be afraid to ask your doctor or pharmacist how drugs might interact with your favorite foods.

vitamin D. For this reason, it is important for older individuals to eat foods rich in vitamin D.

Vitamin B-6 is another vitamin that may be in short supply in older people. There are a couple of reasons for this. First, older people may not eat enough of the foods that contain vitamin B-6, such as liver, beef, pork, chicken, and fish. Second, some drugs, including alcohol, interfere with the body's ability to use the vitamin B-6 in food. To make sure their bodies are getting plenty of vitamin B-6, older people should eat foods rich in vitamin B-6 and talk with their doctor about food and drug interactions.

Older individuals often show low levels of folic acid, a nutrient needed to make red blood cells. Older people often don't eat enough foods rich in folic acid such as liver, fresh fruits, green leafy vegetables, cereals, and whole grains. Also, certain drugs and diseases may interfere with the uptake and use of folic acid by the body. Because of the potential for low folic acid, older people should eat plenty of foods containing this vitamin.

The media has spread the message, "Milk is not just for kids." Older people should listen. Milk and other dairy products are good sources of calcium, a mineral that's needed for healthy, strong bones. Older people, especially women, who do not get enough calcium or weight-bearing exercise may develop osteoporosis. This disease causes thinning of the bones, making them more brittle and more likely to break.

Vitamin and mineral supplements

Everyone needs vitamins and minerals to keep their body healthy. But how much is enough? Can a senior get all the vitamins and minerals he/she needs from food? Do vitamin and mineral supplements give a person more energy and help in dealing with stress? If a little is good, is a lot better? Can supplements

be dangerous? Read on for the answers to these commonly asked questions.

In the United States, the Dietary Reference Intakes (DRIs) are guidelines that tell how much of each vitamin and mineral a healthy person needs each day. The DRIs give either a Recommended Dietary Allowance (RDA) value or an Adequate Intake (AI) value that represent a sufficient intake. Also included in the DRIs is a Tolerable Upper Intake Level (UL), which is the highest level of daily nutrient intake that is likely to pose no risks. The RDA, AI, and UL are all figured for age groups beginning in infancy and including ages 51-70 and above 70 for both genders.

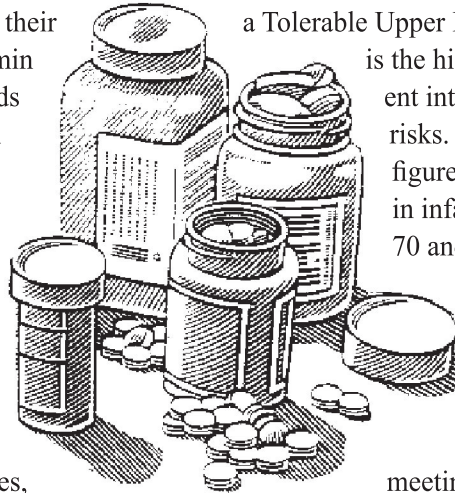
A healthy older individual can get all the vitamins and minerals he/she needs from foods.

Eating a variety of foods and meeting (or exceeding) the recommended number of servings from each of the five food groups daily is an easy way for most older people to get enough vitamins and minerals.

Sometimes, older people take a vitamin and mineral supplement to try to make up for poor eating habits. A pill cannot be a substitute for healthy foods. Foods contain, along with vitamins and minerals, needed fiber, protein, carbohydrates, and fat.

Some people think vitamin and mineral supplements will give them extra energy and help them handle stress. This is not true. While vitamins help the body use the energy from foods, vitamins do not give a person energy. An older person who feels tired and run-down should visit the doctor, not take a vitamin pill. On the other hand, supplements may be needed during times of great physical stress, such as major surgery or severe burns, to help the body repair itself.

Even though most healthy older people do not need supplements, some take a multivitamin with minerals as "insurance" to make sure they get enough vitamins and minerals each day. While this practice may not be helpful, it usually is not harmful if the supplement contains no



more than 100% of the DRIs for any given nutrient. No one should take a vitamin or mineral in doses larger than the DRIs unless prescribed by a doctor; doing so could be harmful.

Dietary supplements

The dietary supplement market is ever growing, especially for people over 65. If you walk through your local pharmacy, you will likely find a supplement for every ailment, every symptom, every ache and pain. There is an increasing population of older individuals in the world, and hence a bigger market for anti-aging supplements. One of the fastest growing market segments for herbal supplements is women older than 65.

Older people who consume dietary supplements are of particular concern because of potential interactions with any drugs they may be taking, either prescription or over-the-counter. It can be dangerous if an older person who is taking a supplement has an underlying disease or medical condition that could make the supplement unsafe or inadvisable for them to consume.

Dietary supplements lack the strict regulation and testing that foods and drugs receive. Current regulation does not prevent unfounded, exaggerated, and misleading health claims on supplement labels. Some dietary supplements are promoted with “anti-aging” or “cure-all” claims for which there is little or no substantiation of either safety or effectiveness. Some supplements even have been found to contain harmful contaminants or much more of the active ingredient than what is indicated on the label. It is recommended that older individuals discuss any dietary supplements with their doctor before they use them.

Health quackery

Health quackery is the sale of medical remedies that either have been shown not to work or have not been tested. Each year, at least \$10 billion is spent on unproven medical treatments. Older individuals looking to restore or improve their health are a prime target for such trickery.

There are several ways to spot health fraud.

1. Products are advertised. Any time a health product (or service) is advertised, it should get a careful look. While not all advertised health products are quackery, quacks often promote their goods on television and in print.
2. It is a treatment or cure for a serious disease. Be wary — the more serious the illness, the more fake cures there are available. In most cases, products bought by mail or over the counter cannot cure serious illnesses.
3. The product can cure more than one illness. This is a con artist’s dream come true; the more medical problems the product claims to cure, the more potential buyers (and profit) there are. There are no “magic bullets.”
4. Testimonials from “satisfied customers” are used to sell the product rather than using hard scientific facts.
5. The advertising uses certain buzzwords. Quacks use words like “miraculous,” “amazing,” and “medical breakthrough” to catch the potential buyer’s attention. A true “medical breakthrough” would be reported in a journal for doctors and scientists, not advertised for sale in magazines or on television.
6. If it sounds too good to be true, it probably is. At best, health fraud can steal an older person’s money. At worst, it can steal an older person’s health by keeping him/her from seeking timely care from a doctor and by offering products that may contain harmful substances. To avoid being the victim of health quackery, older individuals should discuss health problems with medical professionals — M.D. (medical doctor), R.N. (registered nurse), R.D. (registered dietitian), and R.Ph. (registered pharmacist). These specialists are best qualified to answer questions and give up-to-date advice on health issues.

The older years bring about changes in the body that may lead to poor nutritional status. Being aware of potential problems, making smart choices, and seeking medical and nu-

tritional advice from qualified professionals can optimize the older person's health. While healthy eating habits may not guarantee a long, disease-free life, good nutrition is an important factor in maintaining the health of older individuals.

For further information

Mason, Evers, and Hanley. *Osteoporosis: What You Should Know*. Purdue University Cooperative Extension Service Bulletin. CFS-150. 2001.

www.ces.purdue.edu/extmedia/CFS/CFS-150-W.pdf

Mason and Evers. *Picking Nutrition Facts from the Fads*. Purdue University Cooperative Extension Service Bulletin. HE-143. 1992.

National Council on the Aging
409 Third St., SW, Suite 200
Washington, DC 20024
www.ncoa.org/

National Osteoporosis Foundation
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